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14. ABSTRACT During the past quarter, we performed the SAAT follow-up training and assessment at JBLM. In addition, in consultation with the command at Fort Sill we determined that the majority of the Soldiers trained in Feb 2013 would not be at Fort Sill for the one-year follow-up. To secure follow-up assessments from the platoons and most of the Soldiers involved in the study, we have made plans to do the one-year follow-up by email and web-based survey (as originally planned). IRB approvals have been secured for Soldiers who access the one-year follow-up assessment to receive a \$10 gift card for their participation. Awaiting de-identified data from JBLM to perform delayed follow-up analyses.					
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EXECUTIVE SUMMARY

Comprehensive Soldier and Family Fitness and the Medical Research & Material Command have funded a research project led by scientists at the University of Chicago to develop and scientifically test a training package that focuses on social resilience. The project initially called for the scientists to meet with focus groups and later conduct a short pilot study. The results from the pilot study showed sufficient efficacy to proceed to randomized clinical trial to determine the long-term efficacy of the training. In June 2012, FORSCOM reversed an earlier decision to task two brigades to participate in the SAAT project. This introduced delays while replacement brigades were identified and trained. In addition, the draw-down of troops in the Middle East meant that most of the Soldiers who participated in the SAAT project were not then deployed to Afghanistan. Commanders at Fort Sill and JBLM permitted the SAAT project to be implemented in 2013. At Fort Sill, the baseline assessment, SAAT training, and posttest assessment of 16 platoons at Fort Sill were completed in February, 2013, the short-term follow-up at Fort Sill was completed in May 2013, and the one-year follow-up questionnaire was distributed electronically along with an on-site visit to encourage Soldier participation in February 2014. The electronic distribution of the one-year follow-up was what had been proposed, and in consultation with the command at Fort Sill we determined that the majority of the Soldiers trained in Feb 2013 would not be at Fort Sill for the one-year follow-up. To secure follow-up assessments from the platoons and most of the Soldiers involved in the study, we performed the one-year follow-up by email and web-based survey. The annual IRB review at the University of Chicago and Army included IRB approval for Soldiers who access the one-year follow-up assessment to receive a \$10 gift card for their participation. At JBLM, the baseline assessment, SAAT training, and posttest assessment of 32 platoons at JBLM were completed in June, 2013, the short-term follow-up at JBLM was completed in November 2013 (the earliest date time was available for the Soldiers to participate), and the one-year follow-up questionnaire is scheduled for electronic distribution in June 2014 (following the same procedures as used at Fort Sill to ensure comparability of data collection across bases). Response rates for the follow-up assessments have been poor, whether the assessments were secured on site or via a web-based interface. To protect against this possibility and to secure evidence beyond self-reports for training efficacy, we have planned from the outset to collaborate with MAJ Paul Lester and his team from the Army's data facility in California to analyze behavioral and performance data on the Soldiers who participated in the SAAT training. The plan remains to access the relevant de-identified data no later than August 2014; the preliminary work to make this possible has begun. Data analyses, preparation of training documents, and manuscript preparation then will proceed through the end of the 12 month no-cost extension (31 MAR 2015). If proven effective, CSFF's intent is to incorporate this training package into the CSFF POI.

PROJECT MILESTONES

- Phase 1: Develop and estimate the efficacy of the SAAT training (MAY 2011 – APR 2012)

- Developed and tested Social Fitness and Cultural Awareness training in focus groups, Fort Bliss, July 2011.
- Revised training material in light of focus group feedback
- Implemented Pilot Test #1, Joint Base Lewis McChord, September 12-19, 2011.
 - Data analysis completed and pilot results reported, September 23, 2011.
- Established a secure, confidential, reliable, and fast “Soldier to Statistics” computer network, database, and statistical analysis system to ensure the research outcomes are evaluated objectively and accurately in accordance with best practices in data management and statistics.
- Revised training material in light of pilot test feedback
- Presented the revised SAAT to LTC Dennis McGurk, LTC Jeffrey Thomas, and Dr. Amy Adler at the Walter Reed Army Institute for Research (WRAIR), November 17, 2011; revised SAAT based on the feedback we received at WRAIR
- Hired and trained former NCOs with training experience to adapt the language of SAAT to Soldiers and to serve as the lead Trainers for SAAT
- Implemented Pilot Test #2, Fort Sill, March 12-16, 2012.
 - Data analysis completed and pilot results reported, March 18, 2012.
- Revised training material further in light of second pilot test results and feedback.
- Provided additional training to the former NCO’s who would be overseeing the trainers hired for the next phase of the project.
- Hired and trained 8 former NCOs with training experience, January 2013, for Phase 2
- Phase 2: Conduct a Randomized Intervention Study to Determine Training Efficacy (MAY 2012-NOV 2013)
 - The PI met with MG McDonald and his Chief of Staff, COL Dunn in September, 2012, to ask for brigades to participate in SAAT. (As originally proposed and funded, FORSCOM was to task brigades with this training.) MG McDonald agreed to provide two brigades.
 - Achieved a test of Social Fitness training by implementing a randomized double dissociative clinical trial design
 - 16 Platoons from one brigade at Fort Sill, Feb 4-Feb. 8, 2013. The second brigade had scheduled for SAAT on Jan 28-Feb 1, 2013, but the brigade was deployed in late December, 2012. One Platoon from this brigade was available, however, and we trained the Platoon on Jan 28-Feb 1 to provide the (new) Trainers with in vivo experience with SAAT.
 - 32 Platoons from one brigade at JBLM, June 3-7, 2013. The 3-month follow-up training and assessment at JBLM is tentatively scheduled for September, 2013, and the one-year follow-in June, 2014.
 - Preliminary analyses of the pretest-posttest data from Fort Sill and JBLM indicate negligible differences between bases, so we are testing the hypotheses described in our proposal that immediately post-training:
 - social resilience will be greater for Soldiers in the Social Fitness than the Cultural Awareness Condition,

- performance will be better for Soldiers in the Social Fitness than the Cultural Awareness Condition,
 - outgroup prejudice (i.e., prejudiced attitudes toward Afghan people) will be diminished to a greater degree in the Cultural Awareness than the Social Fitness Condition, and
 - baseline characteristics of the Soldiers (e.g., baseline risk, age, military rank) will be related to post-training measures of social resilience and performance.
- Phase 3: Conduct a Long-Term Evaluation of Training Efficacy (DEC 2013 – AUG 2014)
 - Completed the “3-month” follow-up training and assessment was completed at Fort Sill in May, 2013 and at JBLM in November, 2013. About 40% of the platoons trained in June at JBLM were unavailable until mid-November. We, therefore, scheduled the short-term follow-up for 20-21 NOV 2013 at JBLM. Although the interval is 5 rather than 3 months, the high attrition earlier on the JBLM calendar and the low participation rates for the 3-month follow-up at Fort Sill led to the decision to defer this training/assessment until most of the Soldiers had returned to JBLM.
 - In the original proposal, all Platoons were going to be deployed to combat. With the withdrawal from Afghanistan, most of the Platoons were not deployed to combat.
 - Completed the one-year follow-up assessment at Fort Sill. The assessment was distributed electronically along with an on-site visit to encourage Soldier participation in February 2014. The electronic distribution of the one-year follow-up was what had been proposed, and this decision was reinforced when we confirmed with the command at Fort Sill that the majority of the Soldiers trained in Feb 2013 would not be at Fort Sill for the one-year follow-up. Soldiers from the platoons that we trained in Feb 2013 were contacted by email and provided a link to complete a web-based survey. The annual IRB review at the University of Chicago and Army included IRB approval for Soldiers who accessed this survey to receive a \$10 gift card for their participation. The same procedures are to be used at JBLM in June, 2013 to ensure consistency in data collection across bases.
 - Response rates for the follow-up assessments have been poor, whether the assessments were secured on site or via a web-based interface. To protect against this possibility and to secure evidence beyond self-reports for training efficacy, we have planned from the outset to collaborate with MAJ Paul Lester and his team from the Army’s data facility in California to analyze behavioral and performance data on the Soldiers who participated in the SAAT training. The plan remains to access the relevant de-identified data no later than August 2014; the preliminary work to make this possible has begun.
- Phase 4: Dissemination and Transition Plan (SEP 2014-MAR 2015)
 - In Phase 4, we will complete the data analyses, training manuals and materials for the Army, develop a 2-hour version of the SAAT and a full family version of the SAAT, prepare technical reports for the Army, and prepare manuscripts for

publication in scientific journals. Given we are able to access the relevant de-identified data by August, 2014, this will leave seven months to complete these remaining tasks by the end of the 12 month no-cost extension (31 MAR 2015). If proven effective, CSFF's intent is to incorporate this training package into the CSFF POI.

BODY

MAIN AIM OF SAAT TRAINING

The primary goal of the social fitness training is to increase social resilience at the level of the individual, increase squad cohesion, and decrease loneliness given its known effects on depression and stress levels. Decreasing loneliness requires a change in social cognition and behavior and, with time, improvements in the quality of social relationships. The immediate goal of SAAT is to teach Soldiers: (a) new, more constructive and productive ways of thinking about other people (social perception and cognition), (b) new social skills to improve their social interactions with others; and (c) the importance of practicing these new skills and ways of thinking to improve their social resilience. The materials constituting the social fitness training include the following:

Social Awareness and Action Training (SAAT) SKILLS

Skill or Principle		Description
SESSION 1 Survival Skills		
Survival of the fittest		Illustrates how survival of the fittest in social species, including humans, is more about one's social fitness than physical fitness
Social pain		A Soldier must learn to endure and deal with physical pain and with social pain. Learn the "reality" of social pain in its various manifestations (e.g., distance from loved ones, ostracism, rejection, bereavement) and appreciate its direct comparability to physical pain in terms of neural representation in the brain and its consequences for individual and platoon performance and effectiveness. Appreciate the role others have in producing and mitigating social pain.
Malleability of social fitness		Learn that social fitness is like physical fitness. It can be improved with regular practice or exercise, on and off-duty. Physical and social fitness should be lifelong lifestyles.
Benefits of social fitness		Describes scientifically documented benefits of social fitness for individuals and for the groups

Skill or Principle	Description
	in which they live and work.
"Mind" Reading	The human brain spontaneously extracts information about the mental states of others – what they are like, what they think, and what they feel. Many of these social perceptions and inferences are inaccurate, however. With training, one's social perceptions and inferences can become more accurate.
Mind-Reading: Perspective-taking	Learn how to take the perspective of others and gain insight into the thoughts, feelings and intentions of others.
Develop an action plan to achieve change	Make a personal plan to strengthen a specific skill and include strategies to be employed when confronted with obstacles to goal; build the deliberate practice of interpersonal skills into your lifestyle.
Verify	Learn the fallibility and biases when you think you know what someone else is thinking or feeling, and take steps to verify the accuracy of your interpretations. Learn the various ways in which to verify and correct your social perceptions and inferences
SESSION 2 Improving Mind Reading	
Mind-Reading: Reading facial expressions	Improve perspective-taking and mind reading by learning what accurate and inaccurate information is conveyed in artificial, static, slow, and fast facial signals; improve ability to recognize emotions and other mental states in facial expressions. Learn to verify what you think you see while avoiding behavioral confirmation processes.
Mind-Reading: Reading facial expressions Rapid Signals	Rapid facial signals reflect expressive movements created by contractions of the muscles of mimicry. Train how to read these signals, how these signals can mislead a perceiver, which signals are more informative than others, and how to determine what the signals really mean.
Mind-Reading: Reading eyes in particular	Improve perspective-taking ability by learning how to recognize emotions in the eyes alone; learn why eyes are more reliable than lower facial expressions in determining emotional

Skill or Principle	Description
	states and intentions. Learn to verify what you think you see while avoiding behavioral confirmation processes.
Mind-Reading: Reading facial expressions Slow Signals	Slow facial signals reflect folds and wrinkles that are created by a lifetime of contractions of the muscles of mimicry. Train how to read these signals, how these signals can mislead a perceiver, which signals are more informative than others, and how to determine what the signals really mean.
Mind-Reading: Reading facial expressions Artificial Signals	Artificial facial signals reflect facial signals that are the result of items or materials that are added (e.g., glasses, make-up, tattoos). Train how to read these signals, how these signals can mislead a perceiver, which signals are more informative than others, and how to determine what the signals really mean.
Mind-Reading: Reading facial expressions Static Signals	Static facial signals are structural features of the face (e.g., facial shape, coloration, texture). Train how to read these signals, how these signals can mislead a perceiver, which signals are more informative than others, and how to determine what the signals really mean.
Behavioral Confirmation	The principles of behavioral confirmation and self-fulfilling prophecy are covered, and steps to avoid these thinking traps are trained.
Mind-Reading: Reading body posture	Improve perspective-taking ability by learning how body posture influences the meaning of verbal content. Learn to verify what you think you see while avoiding behavioral confirmation processes.
Reading tone of voice	Improve perspective-taking ability by learning how tone of voice influences the meaning of the verbal content. Learn to verify what you think you see while avoiding behavioral confirmation processes.
SESSION 3 Learning to Connect at a Distance	
Connecting Forces: Mirror Processes Mimicry	Learn that mimicry is a means of social contagion that can be used for the good or ill of the unit, and how to distinguish between the two.
Connecting Forces:	Understand key mechanisms and pathways

Skill or Principle	Description
Mirror Processes Empathy, Sympathy and Synchronicity	(means) through which social contagion is promulgated, and how these means can be manipulated to positively enhance or improve relationships.
Connecting Forces: Interpersonal reciprocity & network reciprocity	Understand the natural human tendency to reciprocate or exchange good for good, bad for bad. Recognize when interpersonal reciprocity needs to be countered for the good of interpersonal and unit relationships. Learn that network reciprocity operates through the social reputation one earns, and how to improve one's social reputation.
Connecting Forces: Social contagion	Learn that people's attitudes, ideas, emotions, and behaviors spread across a social network, and learn how to stop such contagion processes.
Connecting Forces: Trust	Learn what it means to be trustworthy and how to become trustworthy. Learn, also, how to judge the trustworthiness of others.
Connecting Forces: Social surveillance	Learn that social surveillance involves more than looking out for the other guy, it also involves monitoring the environment for long-term as well as short-term threats to the safety of one's self, buddy, and unit.
Connecting Forces: Compete for the right reasons	Learn the difference between selfish and selfless competition. Selfish competition boosts the self at the expense of others in the unit (e.g., insulting fellow platoon member); selfless competition benefits the unit and boosts the performance of everyone (e.g., squad challenges). Learn how to engage in selfless competition (e.g., fairness and sportsmanship are key).
Connecting Forces: Cooperate for the right reasons	Learn the difference between selfish and selfless cooperation. Selfish cooperation boosts the self at the expense of others in the unit (e.g., collusion); selfless cooperation benefits the unit even if it doesn't directly benefit individual members (standing another Soldier's post)
SESSION 4 Expanding Unit Cohesion	
Identify and develop unit identity	Develop a positive unit identity that transcends the particular individuals currently in the unit (loyalty to current and former members

Skill or Principle	Description
	regardless of status). Compare unit identity with fan identification with an athletic team that is maintained regardless of changes in players. Learn how to teach new Soldiers in the platoon the unique identity of your unit.
Know and share unwritten rules	Learn how norms shape behavior; identify the norms of your unit and your family; recognize the positive and negative effects of norms individually, interpersonally, and collectively, in the platoon and Army-wide, as well as in the family. Learn, too, how to teach these rules to new Soldiers in the unit.
Group Mind versus Group Think	Learn how highly cohesive, effective groups cultivate a 'group mind', or collective intelligence, to achieve efficiencies and focus the group for task completion (mission accomplishment). Recognize the symptoms of group mind 'gone bad' (Group Think), and learn how to combat, minimize, or reverse these negative effects.
Share good times with the unit (Capitalization)	Learn to recognize the contributions others (perhaps subtly) made to your successes; learn how to share positive experiences and good news with those who contributed to these successes; choose the right way, right time, right place & right person.
Embracing differing points of view	Learn the benefits of a diversity of facts, opinions, beliefs, capacities, and backgrounds can be used to improve the quality of decisions made by a group
SESSION 5 Building Social Resilience	
Stick together during bad times and share negative experiences with the unit	Learn when and how to share your negative experiences with others; recognize that negative moods can spread if not explicitly acknowledged and dealt with; learn the value of shared negative experiences for unit identity and how to turn adversities to promote advantage/growth.
Effective communication (constructive <i>speaking</i> as well as constructive listening)	What is said is filtered through a listener's expectations and prior knowledge. Learn good speaking and good listening skills; practice inclusive humor, honesty, and humility. Learn

Skill or Principle	Description
	the possible short-term gains but significant long-term costs that come from dishonest communications.
Prevent social pain from spreading	Learn how to break out of the spiral of social isolation using “EASE”: Extend yourself (deliberate effort to make face-to-face connections); Awareness and Action Plan (to counter tendencies to focus on the negative); Selection (of compatible connections); Expect the best (to leash the power of the self-fulfilling prophecy). Learn how the platoon can recognize and help the isolated platoon member re-connect, as well.
Transform emotions into actionable intelligence	Learn how to transform raw data about emotions (e.g., physiological changes like heart rate; experiences like pride) into information (e.g., interpretations of the emotional experience) that inform the choice of response options. Understand that the appropriate response is situationally dependent.
Develop flexibility in assuming social roles	Improve role flexibility: learn to identify a gap and to take initiative/step up to fill that gap, even if it means leaving comfort zone if necessary. Learn the importance of personal courage in resisting conformity or role pressures
SESSION 6 Dealing with Your and with Others’ Feelings of Isolation	
Social Connection Continuum: Social connections are rewarding, while social disconnection is painful	Learn that social pain is a signal, that both social connection and disconnection have the same effects on biology, behavior, and the brain as physical rewards or pain.
Social Connection Continuum: Coping with one’s feeling of social isolation	Learn to identify indicators of social isolation and how to cope with these feelings.
Social Connection Continuum: Coping with others’ feelings of social isolation	Learn to identify indicators of social isolation within another person and ways to help them cope with these feelings.
Social Connection Continuum: Good listening, good speaking, good communication	Learn how you as an individual, and you as a member of a unit, can most effectively deal with another Soldier who feels socially isolated from friends, family, or battle buddies
Perspective-taking	Learn how taking the perspective of a Soldier who feels isolated can help form a salubrious

Skill or Principle	Description
	connection between the platoon and the affected Soldier
Verify	Learn more about the various ways in which to verify and correct your social perceptions and inferences to permit a more genuine and effective connection between you, the platoon, and the affected Soldier
SESSION 7 Conflict Resolution	
Effective Conflict Resolution: Defining Conflict	Learn to identify conflict and its effect on interpersonal relationships, unit cohesion, and group performance.
Effective Conflict Resolution: Know when to avoid or address conflict	Learn when conflict is best avoided versus addressed.
Effective Conflict Resolution: Know how to address conflict	Learn appropriate ways to address conflict; distinguish between constructive (focus on finding solutions) versus non-constructive (focus on finding fault or blame) and selfish (the outcome that is best for me and/or worst for you) versus selfless (the outcome that is best for all) ways of addressing conflict. Learn ground rules of conflict resolution (e.g., be fair, prevent escalation, respect differences, and focus on the specific issues in dispute).
Effective Conflict Resolution: De-escalating conflict	Learn methods for de-escalating the tension and emotion that can arise when a conflict erupts.
Effective Conflict Resolution: Selfish versus Selfless Conflict Resolution	Learn methods to distinguish between selfless and selfish conflict resolution and the consequences of each.
Effective Conflict Resolution: Guidelines for Conflict Resolution	Learn conflict resolution guidelines (ground rules) and when to apply them to deal with conflict with others.
Effective Conflict Resolution: Conflict Resolution when the other person persists	Learn how to apply skills to end a conflict when the other person will not stop and continues to pursue the issue.
Effective Conflict Resolution: Know how to exit the blame game	Learn methods for handling conflict that is more about assigning blame than about solving problems or ensuring the situation that led to the conflict is improved.
Effective Conflict Resolution: The Unit's role in Conflict Resolution	Learn appropriate skills the unit (members) can use to address conflict and work to resolve issues that affect interpersonal relationships,

Skill or Principle	Description
	unit cohesion, and group performance.
SESSION 8 Summary and Review	
Capstone Exercise(s)	Participants identify and apply social fitness skills and principles acquired during training to various real-life scenarios they have encountered or they are likely to encounter. The scenarios promote a review of all of the principles and skills covered during the training program.

Cultural Awareness (Resilience) Training

As in the Social Fitness arm, the Cultural Awareness arm of the design consisted of eight 50-minute training sessions. However, the target outcome was to educate Soldiers about the culture, history, and diversity of the people of Afghanistan and to lower outgroup prejudice toward the people of Afghanistan. These eight sessions of training are:

1. Cultural awareness & geography
Importance of cultural awareness in a military context; overview of Afghanistan geography
2. History
Important leaders & events from Afghanistan's history
3. Religion
Pillars and practices of Islam; divisions within Islam
4. Ethnic groups & social customs
Ethnicities in Afghanistan; moral & social codes; rude vs. polite behaviors
5. Economy & politics
Natural resources; labor issues; opium production
6. Recreation
Sports, art, dance, music, film
7. Food, dress, health & education
Muslim dietary code; common foods; forms of women's dress; health status
8. Capstone exercise

To integrate all content with scenarios Soldiers might encounter in Afghanistan

MEASURES

1. Scales and measures.

The measures employed in this project were obtained primarily through a survey instrument implemented on a web-based interface modeled on the Global Assessment Tool (GAT) that is part of the Comprehensive Soldier and Family Fitness (CSF2) program. The Army database is used to secure demographic information (age, gender, race, education, rank, MOS, MRT status) and objective measures of job performance and physical and emotional health and well-being.

Data from our survey and the Army database, including Soldiers' consent to have their data used for research purposes, are released to us de-identified for analytic purposes.

Measures of Social Resilience

Social resilience measures are those that index psychological characteristics (cognitive, affective, behavioral) that are influenced by and influence the perception of social connectedness at the individual level and social belonging and collective identity at the unit level.

1. *Perceived social fitness (PSF)*. Soldiers' degree of confidence in their ability to perform fifteen social behaviors that are indicative of social fitness (e.g., know how my actions affect how others feel, find a good way to solve an interpersonal conflict).
2. *Beliefs about social fitness (BSF)*. Degree to which Soldiers believe in the principles of social fitness (e.g., that social skills can be improved through practice).
3. *Showing social skills (SKILL)*. Frequency with which Soldiers have enacted seven social behaviors for which explicit instruction is provided in the Social Fitness training (e.g., addressing conflict; reading others' nonverbal behaviors).
4. *Loneliness (UCLA)*. Frequency of Soldiers' feelings of social isolation and connectedness without explicitly referring to terms such as "lonely" and "loneliness." Examples of the items are "There are people I feel close to," and "I feel part of a group of friends."
5. *Satisfaction with personal relationships (RS)*. Soldiers' satisfaction, on average, with their relationships with their (1) children, if relevant (*RS_CHILD*), (2) parents, if relevant (*RS_PRNT*), (3) friends (*RS_FRD*), and (4) relatives (*RS_RELTV*).
6. *Satisfaction with Platoon relationships (RS_PL)*. How well Soldiers know people in their Platoon and how satisfied they are with their relationships with people in their Platoon.
7. *Depressive symptoms (PHQ)*. Frequency with which Soldiers experienced depressive symptoms over the last week. One of the items probes *suicidal ideation* (PHQ9) and is examined separately.
8. *Perceived stress (PSS)*. How often, in the last week, Soldiers felt in control or capable of handling stress in their lives.
9. *Perspective-taking (PTS)*. Degree to which Soldiers endorse perspective taking skills such as attempting to understand another person's point of view.
10. *Hostility (CMHO)*. The "Aggressive Responding" subscale of the Cook–Medley Hostility Scale is used to assess whether Soldiers endorse statements such as, "I can be friendly with people who do things which I consider wrong," and "I have at times had to be rough with people who were rude or annoying."
11. *Empathy (EMP)*. Degree to which Soldiers experience concerned feelings about others' misfortunes.
12. *Interaction anxiety (IAS-S)*. Degree to which Soldiers feel anxious in social situations.
13. *Mood (MOOD)*. Mood during the past week, from extremely unpleasant to extremely pleasant.
14. *Sleep quality (SLEEP)*. Overall sleep quality during the past week, from very good to very bad.
15. *Catastrophizing (CATA)*. Degree to which Soldiers believe that bad things that happen to them are worse than they actually are.

16. *Generalized trust (TRUST)*. Degree to which Soldiers believe that, in general, people can be trusted and try to be fair.
17. *Social integration (CHILD, RELAT, FRIEND, CHURCH)*. Number of children, close relatives, and friends, and religious group affiliation (yes/no).
18. *Partner status (RELSTAT)*. Whether currently in a serious relationship.
19. *Marital status (MARSTAT, MAR1)*. Current marital status (5 categories); married or living with someone in marital-like relationship (versus all other categories).
20. *Marital satisfaction (MS)*. The quality of the marriage relationship.
21. *Communication with friends and family (COM_FRQ_PHONE/ONLINE; COM_SAT_PHONE/ONLINE)*. Frequency of communication with friends and family by phone and by internet, and degree of satisfaction with each type of communication.

Measures of Performance

Performance measures are those that index belief in, endorsement of, and behavioral support for Army values and goals.

1. *Platoon cohesion and support (PCS)*. Soldiers' degree of agreement with statements about cohesion with and support by fellow Platoon members and leaders.
2. *Platoon conflict (PCON)*. Frequency with which Soldiers observe conflictual behaviors in their Platoon (e.g., arguments, rudeness).
3. *Organizational (Platoon) trust (OT)*. Degree to which Soldiers believe that their fellow Platoon members and leaders can be trusted to respect, value, and care for them.
4. *Leadership quality (MLQ)*: Soldiers' ratings of the frequency with which their first-line supervisor exhibits a supportive leadership style (e.g., spends time teaching and coaching, expresses satisfaction when I meet expectations).
5. *Negative leadership behaviors (LB_NEG)*: Frequency with which Soldiers' first-line supervisor exhibits unsupportive behaviors (e.g., embarrasses Platoon members in front of other).
6. *Collective Platoon efficacy (CPE)*. Soldiers' degree of confidence that members of their Platoon are collectively able to manage situations that commonly arise in Platoons (e.g., resolve conflict, support each other during stress, develop a strong identity).
7. *Perceived organizational support (POS)*. Perceptions of the Army's support of and care for them individually.
8. *Organizational commitment (OCOM)*. Intensity of Soldiers' feelings of connection and belonging in the Army.
9. *Organizational citizenship behaviors (OCB)*. Soldiers' evaluation of the likelihood that members of their Platoon will exhibit prosocial behaviors which are good for the life of the group rather than the individual.
10. *Counterproductive work behaviors (CWB)*. Soldiers' evaluation of the likelihood that members of their Platoon will exhibit negative behaviors toward each other.
11. *Treatment of weakest link (TWL)*. Soldiers' belief that social rejection and withholding help for poorly performing members is justified.
12. *Hardiness (Hard)*. Soldiers' beliefs that their performance matters to the Platoon, and that they are contributing in an important way to the Platoon's mission.

13. *Malingering beliefs (MAL_BELIEFS)*. Soldiers' belief that it is acceptable to go on sick call for minor medical problems and to avoid unpleasant or difficult duties.
14. *Intent to re-enlist (ITRE)*. At baseline and at 3- and 12-month follow-up, Soldiers degree of confidence that they will stay in versus leave the Army upon completion of their current obligation.

Objective measures of performance.

15. *Physical fitness*. Results of physical fitness tests from the Army database.
16. *Drug screen*. Drug screen results from the Army database.
17. *Medical visits (i.e., number and nature, including ICD-9 psychiatric codes)*.
18. *Medical profile*. Information on soldiers' physical profile (i.e., PULHES).
19. *Impulsive behaviors (i.e., Adverse Actions)*. Information on drug and alcohol reprimands in Soldiers' files.
20. *Suicide*. Suicides and attempts from the Army database.
21. *MRX Platoon-level performance metrics*. For deploying troops, at post-MRX (pre-deployment), MRX performance metrics are supplied by the Platoon officer for each of his Soldiers.
22. *Selection for Special Status*. At baseline and at 12-month follow-up/post-deployment, whether Soldiers were selected for special status awards such as nomination to the Sergeant Audie Murphy Club; from Army database.
23. *Promotions*. At baseline and at 12-month follow-up/post-deployment, whether Soldiers were promoted; from the Army database.
24. *Awards*. At baseline and at 12-month follow-up/post-deployment, whether Soldiers received expert infantry and airborne/air assault awards; from the Army database.

Measures of health & well-being.

25. *Self-rated health (HEALTH, EMOTION)*. Soldiers' ratings of their (1) physical and (2) emotional health, from poor to excellent.
26. *Bodily pain (PAIN)*. Intensity of pain experienced in the last week and the degree to which pain has interfered with normal work.
27. *Alcohol misuse (ALCOHOL)*. Soldiers' belief that they have over-consumed alcohol in the past week, and that their alcohol consumption is problematic.
28. *Vitality (VITALITY)*. How energetic Soldiers felt during the past week.
29. *PTSD symptoms (PTSD, PTSD_S)*. For Soldiers who have previously been deployed, the 17-item PTSD Checklist – Military version (PCL-M) was administered regarding symptoms subsequent to a stressful military experience. All Soldiers complete a 4-item version of the PTSD scale that asks the degree to which ANY frightening, horrible, or upsetting experience in the past month has caused four symptoms.
30. *Life satisfaction (LS)*. Soldiers' satisfaction with their life as a whole.
31. *Benefit-finding (BENEFIT)*. Degree to which Soldiers feel they have benefited from their military experiences (e.g., confidence in abilities, pride in accomplishments).

Measures of Cultural Awareness

These measures were employed to evaluate the effectiveness of Cultural Awareness training and to determine the unique effects of Cultural Awareness versus Social Fitness Training.

1. *Knowledge about Afghanistan / Cultural Awareness (CA)*. Soldiers' knowledge about different aspects of Afghani culture, economy, and religion that are taught in the Cultural Awareness Condition.
2. *Outgroup prejudice*. Soldiers' perceptions of the warmth and competence of Afghani (IGOG_AFW, _AFC) and American (IGOG_USW, _USC) people. Lower ratings of Afghani relative to American people signifies greater outgroup prejudice on dimensions of warmth and competence, respectively (IGOG_WDIF, IGOG_CDIF).

Measures of Stress Exposure

1. *Stressful life events (LE_SUM)*. At 12-month follow-up (post-deployment), whether Soldiers have experienced each of 17 life events, including natural disasters, the death of someone close to them, divorce, legal problems, and health threats.
2. *Previous deployment (PD)*. At baseline, how many times Soldiers have been deployed, and how many times to a combat zone.
3. *Combat experiences (CE)*. At post-test (for those previously deployed to a combat zone) and at 12-month follow-up (for those just returned from deployment to a combat zone), how many of 29 experiences Soldiers underwent in their most recent deployment (e.g., was attacked or ambushed, was directly responsible for the death of an enemy combatant, witnessed violence within the local population).
4. *Harassment (Harass)*. At pre-test, and at 3- and 12-month follow-up, the frequency with which Soldiers felt the leaders or other members of their Platoon were overly critical, unfair, and discriminatory of them.
5. *Childhood trauma (CT)*. The frequency with which Soldiers experienced neglect, physical violence, and emotional abuse during their childhood and teenage years.

Measures of Disposition

1. *Global Assessment Tool (GAT)*. Soldiers' scores on the GAT were used to assign high-versus low-risk status to each Soldier at baseline. Those in the bottom 20% of scores on the GAT were deemed at high risk of negative outcomes.
2. *Personality (BIG5S_EX, _A, _O, _C, _ES)*. At post-test and 12-month follow-up, the degree to which Soldiers can be characterized, respectively, as (1) extraverted, (2) agreeable, (3) open to new experiences, (4) conscientious, and (5) emotionally stable.

Demographic Measures

At baseline, TechWerks will access the Army database to obtain data on:

1. *Age*.
2. *Gender*.
3. *Education*. Completion of a high school diploma was contrasted with no diploma.
4. *Rank*. These data are dichotomized to distinguish between NCO's and non-NCO's.
5. *Military Occupational Specialty (MOS)*
6. *Master Resilience Training (MRT)*. Soldiers with MRT training are distinguished from those without.

SAAT Evaluation Measures

1. *Consent (CONSENT)*. For Army purposes, all data are used to determine training efficacy. For research purposes, only those data are used that Soldiers have agreed to release. At each assessment, Soldiers were asked whether they are willing to release their data for research purposes.
2. *Satisfaction with training (SWT)*. Soldiers are asked at post-test how satisfied they were overall with the SAAT training.
3. *Attendance (ATTEND_SUM)*. Number of attended sessions. Platoon leaders verified the attendance of each Platoon member at each training session, and provided reasons for late arrivals and absentees.
4. *Instructed response items (IR_DG, IR_RATIO)*. Number and percent incorrect responses to items with instructed responses.
5. *Outliers (OUTLIER_SUM)*. Number of scales on which the individual's values exceed 2.5 SDs from the mean.
6. *Intervention adherence measurement*. Training sessions are audiotaped to permit an evaluation of the Trainer's adherence to the training manual for the intervention. Following the intervention, two judges independently rate the adherence of each Trainer to the training manual for each session. Judges rated the Trainer's coverage of each topic in each training section on a 3-point scale (1 = material not covered, 2 = material covered partly or poorly, 3 = material covered well), and the sum of these scores across topics within a session constituted a measure of *Overall Training Adherence*. In addition, judges rated each training session in terms of "pacing and efficient use of time," "teaching effectiveness (organized)," and "interpersonal effectiveness (engaging/motivational)," using a 3-point scale (1 = poor, 2 = good, 3 = excellent), and the sum of these scores served as the measure of *Overall Session Quality*. Inter-rater reliability is determined to evaluate the accuracy and reliability of the scoring of the training sessions.

KEY RESEARCH ACCOMPLISHMENTS

1. IRB and HRPO approval of protocol up-to-date.
2. Computerized surveys developed and tested.
3. Data processing and analysis scripts developed and tested.
4. Final revisions to training content completed
5. Training curriculum and materials developed, training manuals completed, and materials prepared for Soldiers and Platoon Leaders
6. Eleven Trainers (former NCOs) trained, including a 10-week course on social resilience to enhance SME of two former NCO training overseers.
7. The analysis of the randomized clinical trial and immediate pretest/posttest assessments at Fort Sill and JBLM has been completed.
8. The "3-mo" booster and assessments at Fort Sill and JBLM have been completed.
9. The one-year follow-up assessment at Fort Sill has been completed, and the one-year follow-up assessment at JBLM is scheduled and prepared.
10. The training materials for SAAT were completed and shared with WRAIR scientists. Variations on these training materials are being prepared to provide a wider array of

training materials as well as more complete materials for use when selecting and training the trainers.

11. A 2-hour version of the SAAT intervention (social fitness training) was developed and shared with WRAIR scientists.
12. Discussions are underway on how best to access the de-identified data to permit the one-year posttest analyses of objective data from the US Army database (in collaboration with MAJ Paul Lester and his team).

REPORTABLE OUTCOMES

1. The PI presented results of the SAAT at the IPO at Fort Detrick in August, 2013.
2. The PI presented the Class of 1951 Distinguished Lecturer for General Psychology for Leaders at the United States Military Academy, where he presented the foundational research for this project, emphasized the importance for leaders to understand the social vulnerabilities and resilience of Soldiers and platoons in the Army, and spoke briefly about the SAAT study.
3. A publication in *Scientific Reports* testing a component of our training – the characterization of social pain as coopting and acting through the physical pain system (Cacioppo, S., Frum, C., Asp, E., Weiss, R., Lewis, J. W., & Cacioppo, J. T. (2013). A quantitative meta-analysis of functional imaging studies of social rejection. *Scientific Reports*, 3, 2027. DOI: 10.1038/srep02027.)
4. The SAAT Project includes the randomized clinical trial to evaluate training efficacy and long-term impact. Figure 1 (below) presents the CONSORT Chart summarizing the sample sizes from each base at each measurement period. The measurement periods depicted in Figure 1 are as follows:

T1 (Pretest) and T2 (Follow-up/Posttest): Administer the SAAT Social Fitness and Cultural Awareness Training at Fort Sill and JBLM

Platoons randomly assigned to SF or CA training
One 2-hr block per platoon per day for each of 5 days
Fort Sill: 16 Platoons (4-8 FEB 2013)
JBLM: 32 Platoons (3-7 JUNE 2013)

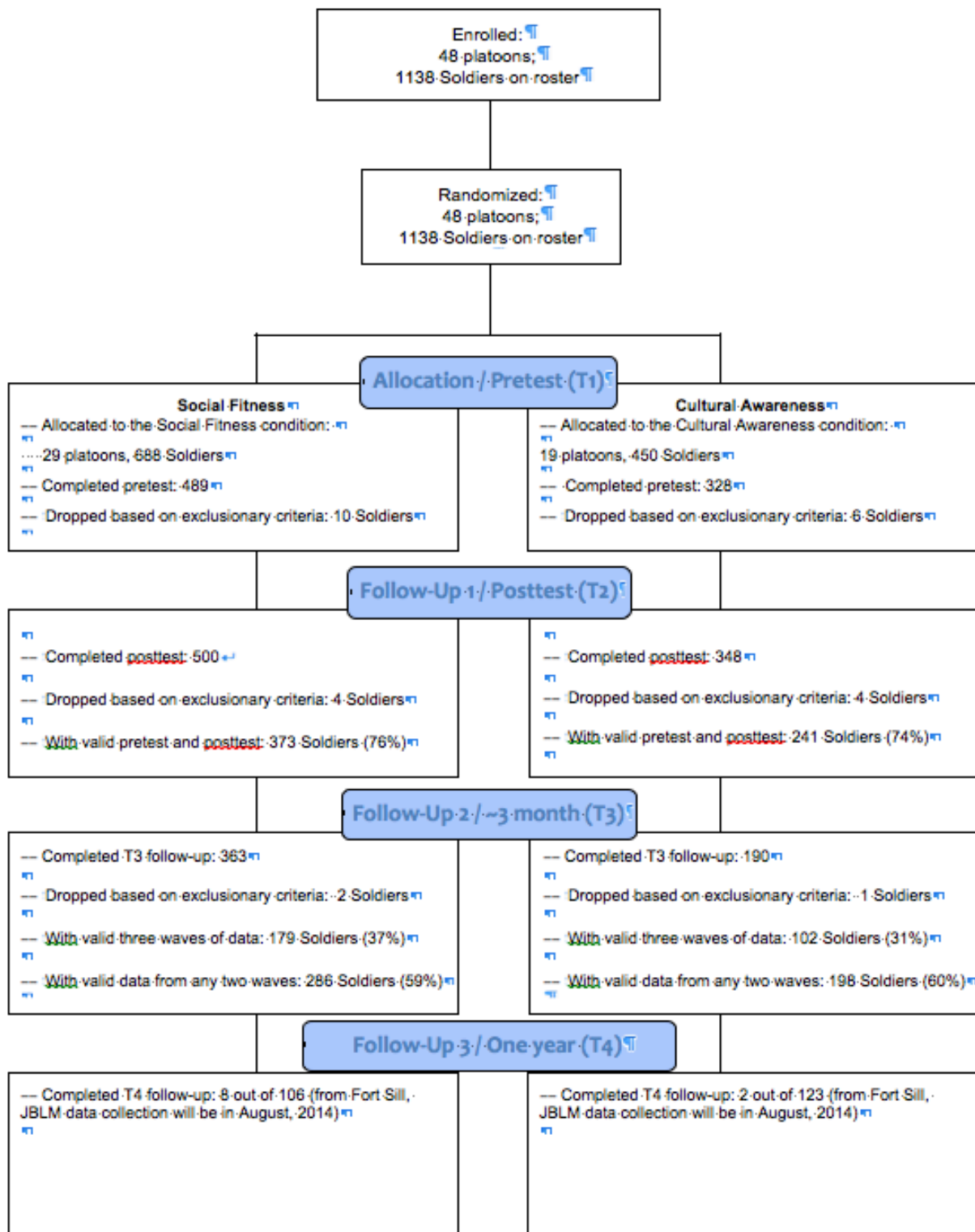
T3 (Follow-up 2): Administer pre-deployment assessment & booster session 1-4 months after initial training (2 hrs/platoon)

Fort Sill (2 MAY 2013)
JBLM (NOV - 2013)

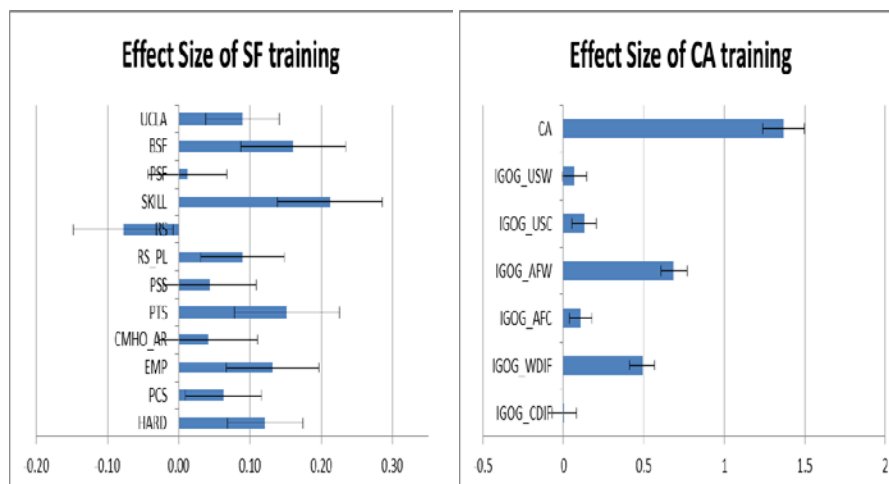
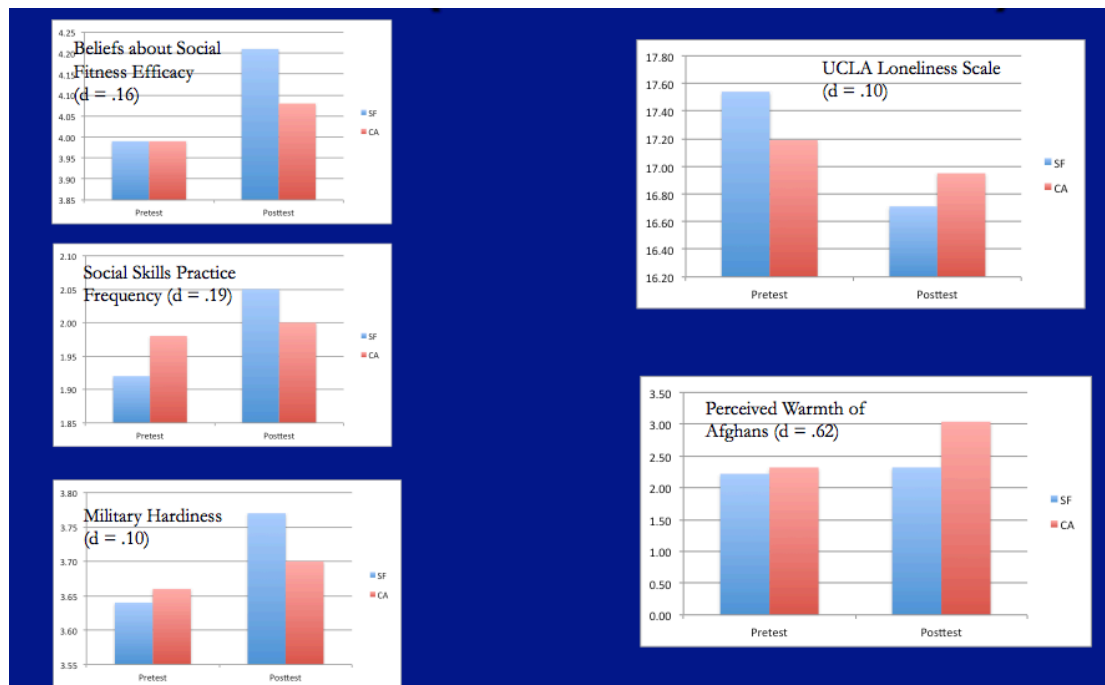
T4 (Follow-up 3): Administer one-year post-training assessment (web-based survey)

Fort Sill (FEB 2014)
JBLM (JUN 2014)

Figure 1. CONSORT Flow Diagram for Social Awareness and Action Training (SAAT).



Preliminary Intervention Efficacy Assessment: T2-T1 (Posttest-Pretest) Results for Fort Sill & JBLM (No differences were found as a function of Base)



The SAAT produced improvements in the Intervention Condition (left panel) and

The results show that SAAT training proved to be effective. The left panel of Figure 2 shows the outcomes on measures predicted to be improved by Social Fitness (but not Cultural Awareness) training. Results showed that Social Fitness (social resilience) training, compared to the Cultural Awareness training, lowered loneliness (UCLA), increased beliefs in the importance of social fitness BSF) but did not increased their perceived social fitness (PSF), increased the frequency with which Soldiers enacted seven social behaviors on which they received training (SKILL), did

not change their satisfaction with their personal relationships (RS) but did increase their satisfaction with Platoon relationships (RS_PL), slightly decreased perceived stress (PSS), increased their perspective taking (PTS), decreased their hostility/aggressive responding (CMHO AR), increased empathy (EMP), increased platoon cohesion and support (PCS), and increased military hardiness (HARD). That is, the Soldiers reported improvements in those areas in which they received training (e.g., relationship satisfaction with the Platoon) but did not (yet) generalize beyond the training target (e.g., relationship satisfaction with their children, parents, friends, and relatives - RS).

The double dissociative randomized clinical trial design made it possible to test whether both arms were effective but on different outcomes. Any general effects of training (e.g., placebo effects, Hawthorne effects) should affect all outcome measures. The right panel of Figure 2 shows the outcomes on measures predicted to be improved by Cultural Awareness (but not Social Fitness) training. Results showed that Social Fitness (social resilience) training, compared to the Cultural Awareness training, increased their knowledge about Afghanistan, and decreased outgroup bias toward Afghans primarily through increases in the warmth felt toward Afghans (IGOG_AW).

Note, however, that most effect sizes for the Social Fitness training are small, in the .05-.15 range. These effect sizes are generally consistent across a range of measures, however. An important distinction between the Social Fitness and Cultural Awareness training was that the former was designed to change beliefs, social cognition, and social behaviors – outcomes that are resistant to change through the operation of a set of forces including personality, habits, and ideologies. Cultural Awareness training, on the other hand, was designed to increase their knowledge about the diversity of the Afghan people through increasing their knowledge of the history, culture, religions, and politics of Afghanistan. The Soldier's initial knowledge about these topics was quite low, whether or not they had been deployed previously, and eight hours of intensive training on these topics had a substantial impact on their knowledge about Afghanistan. This training did little to change the Soldier's beliefs in the competence of the Afghan people but, as specifically targeted, it did increase the Soldiers' knowledge of the diversity of the Afghan people and of many of their similarities to our own citizens.

Together, the results revealed the dissociated effects that would be expected if the training was effective and specific.

CONCLUSIONS

The analyses in which factors such as deployment history, rank, and demographics confirmed preliminary results showing that the training lowered loneliness in the social fitness (intervention) group and decreased outgroup hostility (viz., increased warmth) toward Afghans in the cultural awareness (active control) group. The effect sizes were small but statistically significant, in accord with the experimental hypotheses. From the outset, we have held that a strong test of training efficacy is whether these changes endure and increase resilience and improve performance. For this reason, we scheduled the follow-up training and assessment to

permit participation of as many Soldiers as possible and staff were on base to encourage Soldier participation. The experimental attrition for the follow-up assessments thus far has nevertheless proved to be high. If the attrition is similar at JBLM, the 3-month and one-year surveys of Soldiers will be so underpowered and unrepresentative of the whole as to provide little useful information. This circumstance was considered a possibility at the outset of the SAAT and was a major reason for the inclusion in SAAT of the proposal to collaborate with MAJ Paul Lester and his team from the Army's data facility in California to analyze behavioral and performance data on the Soldiers who participated in the SAAT training. (A second reason for this important component of SAAT was to address possible criticisms of the empirical evidence for CSF2 training being limited to potentially biased self-report outcomes). The plan remains to access the relevant de-identified data no later than August 2014, and the preliminary work to make this possible on MAJ Lester's end and on our end has begun. Data analyses, preparation of training documents, and manuscript preparation then will proceed through the end of the 12 month no-cost extension (31 MAR 2015).

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